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10/620,047	07/14/2003	Meng Yao	A2584Q-US-NP XERZ 2 01843	7659

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FAY SHARPE / XEROX - ROCHESTER
1100 SUPERIOR AVE.
SUITE 700
CLEVELAND, OH 44114

EXAMINER	
WORKU, NEGUSSIE	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/620,047	YAO, MENG	
	Examiner	Art Unit	
	NEGUSSIE WORKU	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-9,12 and 13* is/are rejected.

7)☐ Claim(s) *4,10 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/14/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. This Office action is in response to the Office action mailed on September 10, 2007, applicant's arguments filed on 01/10/08, have been carefully reviewed and respectfully considered, but they are not persuasive.

Regarding claims 1, 5, the Applicant alleged that the combination of Mongeon (USP 5710824) in view of Magee (USP 5,231,504) fails to show or suggest" determining a relative amount of chroma in the initial CMY data values " as currently amended in claims 8, 12 respectively. In response, the Examiner respectfully disagrees because the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, the Examiner asserts that the combination of Mongeon (USP 5710824) and Magee (USP 5,231,504) when considered as a whole clearly teaches that "determining a relative amount of chroma in the initial CMY data values "as currently amended in claims 8 and 12 are well-known in the art at the time of the invention was made. In particular, Magee '504' clearly suggested the advantage of combining the teachings of

the references, specifically, with regard to claim 1 and 5, as discussed in the last Office Action Mongeon, at col. 5, lines 36-40, discloses a method of gray balance and color saturation adjustment, where the method determines a relative amount of chroma, in the initial CMY data values. The Office Action supports this argument with the cited teaching of "CMY colorant signal determined through interpolation, (i.e., saturation), and therefore, Examiner asserts that it would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teaching Magee (824) for purpose of providing a user a saturation ratio accelerator factor for tailoring an original highly saturated or lightly saturated image to a gumate of the subtractive reproduction device in order to preserve the high or low saturation characteristics of original image, as discussed by Magee (504), in co1.9, lines 35-40.

In view of the above, having the system of Mongeon '824' and then given the well- established teaching of Magee '504', the Examiner asserts that it would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine for the purpose of reducing and controlling the amount or the saturation of light in the image processing apparatus as suggested by Magee'504'.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 5-9, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mongeon (USP 5710824) in view of Magee (USP 5,231,504).

With respect to claim 1, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2) comprising: determining a relative amount of gray in initial CMY data values (determining a maximum and minimum values of colorant signal, col4, lines 35-45);

Determining a relative amount of chroma in the initial CMY data values (CMY colorant signal determined through interpolation, col.5, lines 36-40); and for each of the initial CMY data values, (colorant signal CMY, as shown in fig 2), adding a portion of a corresponding maximum gray balance adjusted value (determining maximum and minimum value, col.6, lines 53-57) and a portion of a corresponding maximum color saturation adjusted value to produce respective gray balance adjusted and color saturation adjusted CMY data values (col.5, lines18-21).

Although Mongeon teaches determining a maximum/minimum CMY value in a color correction circuit 20 as shown in fig 2), Mongeon fails expressly to teach wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chroma.

Magee in the same area of method for improving color reproduction using linear mixing calculation based on positional relation ships as shown in fig 1-4), teaches wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome, (step for adjusting saturation in box 110 of fig 1, recognize that the ratio of the original hue to the pure hue calculating for adjusting saturation should not include the portion of the distance, col.18, lines 37-50).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Mongeon (824) to include: teaches wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified imaging device of Mongeon by the teaching of Magee (824) the purpose and the motivation doing that is, it would have provide to a user a saturation ratio accelerator factor for tailoring an original highly saturated or

lightly saturated image to a gumate of the subtractive reproduction device in order to preserve the high or low saturation characteristics of original image, as discussed by Magee (504), in col.9, lines 35-40.

With respect to claim 2, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), wherein determining a relative amount of gray comprises calculating a ratio between a minimum of the initial CMY data values and a maximum of the initial CMY data values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

With respect to claim 3, Mongeon teaches a method (scanning and printing system as shown in fig 2), wherein determining a relative amount of chroma comprises calculating (1-RATIO) wherein RATIO is a ratio between a minimum of the initial CMY data values and a maximum of the initial CMY data values (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants, col.5, lines 62-68).

With respect to claim 5, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2)

comprising: determining a relative amount of gray in initial CMY data values (determining a maximum and minimum values of colorant signal, col4, lines 35-45);

determining a relative amount of chroma in the initial CMY data values (CMY colorant signal determined through interpolation, col.5, lines 36-40); and for each of the initial CMY data values, (colorant signal CMY, as shown in fig 2), adding a portion of a corresponding maximum gray balance adjusted value (determining maximum and minimum value, (col.6, lines53-57) and a portion of a corresponding maximum color saturation adjusted value to produce respective gray balance adjusted and color saturation adjusted CMY data values (col.5, lines18-21).

Although Mongeon teaches determining a maximum/minimum CMY value in a color correction circuit 20 as shown in fig 2), Mongeon fails expressly to teach wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chroma.

Magee in the same area of method for improving color reproduction using linear mixing calculation based on positional relation ships as shown in fig 1-4), teaches wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome, (step for adjusting saturation in box 110 of fig 1, recognize that the ratio of the original hue to the pure hue calculating for adjusting saturation should not include the portion of the distance, col.18, lines 37-50).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Mongeon (824) to include: teaches wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified imaging device of Mongeon by the teaching of Magee (824) the purpose and the motivation doing that is, it would have provide to a user a saturation ratio accelerator factor for tailoring an original highly saturated or lightly saturated image to a gumate of the subtractive reproduction device in order to preserve the high or low saturation characteristics of original image, as discussed by Magee (504), in col.9, lines 35-40.

With respect to claim 6, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), wherein determining a relative amount of gray comprises calculating a ratio between a minimum of the initial primary color data values and a maximum of the initial primary color data values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

With respect to claim 7, Mongeon teaches a method of gray balance adjustment

and color saturation adjustment (scanning/printing system as shown in fig 2), wherein determining a relative amount of chroma comprises calculating (1-RATIO) wherein RATIO is a ratio between a minimum of the initial primary color data values and a maximum of the initial primary color data values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

With respect to claim 8, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), comprising: generating respective gray balancing components for initial CMY data values (color space transformation circuit 20 of fig 1, for generating CMY data value of color and gray balance, as shown in fig 20 of fig 1); determining a relative amount of chroma in the initial CMY data values (col.5, lines 15-30); generating respective color saturation adjustment components for the initial CMY data values (col.5, lines 62-68; and adding respective gray balancing components and respective color saturation adjustment components to produce respective gray balanced and color saturation adjusted CMY data values (col.5, lines 15-30).

With respect to claim 9, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), comprising: each gray balancing component comprises a portion of a corresponding

maximum gray balance adjusted value, (determining maximum and minimum value, (col.6, lines53-57) wherein such portion of a corresponding maximum gray balance adjusted value is a function of a relative amount of gray in the initial CMY data values; (determining maximum and minimum value, (col.6, lines 53-57) and each color saturation adjustment component comprises a portion of a corresponding maximum color saturation adjusted value, wherein such portion of a corresponding maximum color saturation adjusted value is a function of a relative amount of chroma in the initial CMY data values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

With respect to claim 12, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), comprising: generating respective gray balancing components for initial CMY data values (color space transformation circuit 20 of fig 1, for generating CMY data value of color and gray balance, as shown in fig 20 of fig 1); determining a relative amount of chroma in the initial CMY data values (col.5, lines 15-30); generating respective color saturation adjustment components for the initial CMY data values (col.5, lines 62-68; and adding respective gray balancing components and respective color saturation adjustment components to produce respective gray balanced and color saturation adjusted CMY data values (col.5, lines 15-30).

Although Mongeon teaches determining a maximum/minimum CMY value in a color correction circuit 20 as shown in fig 2), Mongeon fails expressly to teach wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chroma.

Magee in the same area of method for improving color reproduction using linear mixing calculation based on positional relation ships as shown in fig 1-4), teaches wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome, (step for adjusting saturation in box 110 of fig 1, recognize that the ratio of the original hue to the pure hue calculating for adjusting saturation should not include the portion of the distance, col.18, lines 37-50).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Mongeon (824) to include: teaches wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified imaging device of Mongeon by the teaching of Magee (824) the purpose and the motivation doing that is, it would have provide to a user a saturation ratio accelerator factor for tailoring an original highly saturated or

lightly saturated image to a gumate of the subtractive reproduction device in order to preserve the high or low saturation characteristics of original image, as discussed by Magee (504), in col.9, lines 35-40.

With respect to claim 13, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), comprising: each gray balancing component comprises a portion of a corresponding maximum gray balance adjusted value, (determining maximum and minimum value, (col.6, lines53-57) wherein such portion of a corresponding maximum gray balance adjusted value is a function of a relative amount of gray in the initial CMY data values; (determining maximum and minimum value, (col.6, lines 53-57) and each color saturation adjustment component comprises a portion of a corresponding maximum color saturation adjusted value, wherein such portion of a corresponding maximum color saturation adjusted value is a function of a relative amount of chroma in the initial CMY data values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

Claims having Allowable subject matter

4. Claims 4, 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 4, is objected to for having allowable subject matter, for the reason the prior art searched and of record neither anticipates nor suggests a method wherein determining a relative amount of gray comprises determining a relative amount of gray

using (maximum and minimum values of CMY is being determined, RATIO=MIN(C, M, Y)/MAX(C, M, Y) wherein MIN(C, M, Y) is a minimum of the initial CMY data values and MAX(C, M, Y) is a maximum of the initial CMY data values; determining a relative amount of chroma comprises calculating (1-RATIO), and adding a portion of a corresponding maximum gray balance adjusted value and a portion of a corresponding maximum color saturation adjusted value to produce respective gray balance adjusted and color saturation adjusted CMY data values (col.5, lines 45-50) comprises: C=GRAYBAL_C(C)*RATIO+SAT_C(C)*(1-RATI- O)

M=GRAYBAL_M(M)*RATIO+SAT_M(M)*(1-RATIO),

C=GRAYBAL_Y(Y)*RATIO+SAT_Y(Y)*(- 1-RATIO) wherein GRAYBAL_C(C), GRAYBAL_M(M) and GRAYBAL_Y(Y) are maximum gray balance adjusted values, and SAT_C(C), SAT_M(M) and SAT_Y(Y) are maximum color saturation adjusted values.

Claim 10, is objected to for having allowable subject matter, for the reason the prior art searched and of record neither anticipates nor suggests a method of gray balance adjustment and color saturation adjustment wherein generating respective gray balancing components comprises calculating, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, GRAYBAL_C(C)*RATIO GRAYBAL_M(M)*RATIO GRAYBAL_Y(Y)*RATIO wherein GRAYBAL_C(C), GRAYBAL_M(M) and GRAYBAL_Y(Y) are maximum gray balance adjusted values, and RATIO is a ratio

between a minimum of the initial CMY data values, and a maximum of the initial CMY data values.

Claim 11, is objected to for having allowable subject matter, for the reason the prior art searched and of record neither anticipates nor suggests a method of gray balance adjustment and color saturation adjustment, wherein generating respective color saturation adjustment components comprises calculating: SAT_C(C)*(1-RATIO) SAT_M(M)*(1-RATIO) SAT_Y(Y)*(1-RATIO) wherein SAT_C(C), SAT_M(M) and SAT_Y(Y) are maximum color saturation adjusted values, RATIO is a ratio between a minimum of the initial CMY data values and a maximum of the initial CMY data values.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NEGUSSIE WORKU whose telephone number is (571)272-7472. The examiner can normally be reached on 9A-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Negussie Worku/
Examiner, Art Unit 2625

/Edward L. Coles/
Supervisory Patent Examiner, Art Unit 2625